Pilot Study of Self-reported Resident Confidence Prior to ABA OSCEs

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ABSTRACT

In 2017 an Objective Structured Clinical Exam (OSCE) was added to the APPLIED portion of the anesthesia residency certification exam. Competencies tested include topics of communication and professionalism as well as technical skills. While objective ability has been studied, there is little documented about resident subjective confidence in the examination.

A survey of 19 questions, formatted to address perceived ability to pass or fail components that would be presented during the OSCE, was sent out to the 80 residents at IU School of Medicine anesthesia program. 71% stated they would fail to articulate and apply principles of patient safety and quality improvement (QI) in relation to a clinical scenario if tested today. For technical skills, 88% reported that they would most likely fail interpretation of TEE images relevant to anesthesia practice if examined today.

The results of this study suggest curriculum changes that add content on QI and TEE are most desired from residents and will most improve first pass success on the American Board of Anesthesiology (ABA) APPLIED OSCE exam.

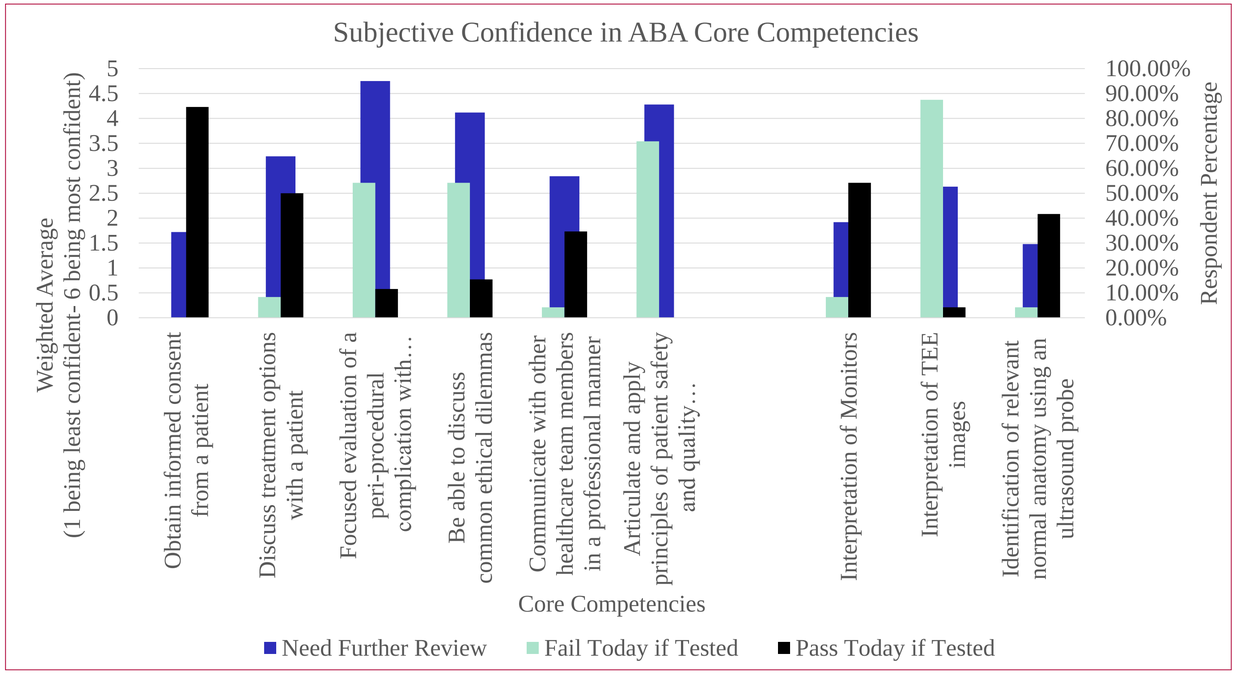
BACKGROUND

- **Objective Structured Clinical Exams (OSCEs)** are commonly used in both **formative and summative assessment** in medical school and residency.
- OSCEs can test both practical skills and communication and assess medical competence at a “shows how” and “does” level.[1]
- Building off of the work of the Royal College of Anaesthetisits and Israeli National Board, the ABA OSCE is 7 stations as of 2020 (9 stations from 2017-2020) testing[2]:
  - **Communication and Professionalism:** Informed Consent and Treatment Options, Peri-procedural Complications, Ethical Issues, Communication with Other Professionals, and Practice Based Learning
  - **Technical Skills:** Interpretation of Monitors and Echocardiograms, and application of ultrasonography[3]

MATERIALS and METHODS

- Survey was sent out in 2017 via email to all 80 anesthesia residents (CA1-CA3) at IUSM with one reminder email 3 weeks later.
- Survey was optional and no incentive was offered for participation.
- Survey consisted of 18 close-ended questions and 1 open-ended free text question.
- First 2 questions addressed what year of residency participants were followed by if they planned to apply to a fellowship.
- Questions 3-8 addressed personal awareness of the OSCE component of the APPLIED examination and what that OSCE entails on testing day.
- Questions 9-18 directly addressed topics from the ABA content outline.
  - Questions 9-11 addressed communication and professionalism.
  - Questions 12-18 assessed personal confidence in specific technical skills.
- Weighted averages were utilized to assess confidence across all participants when the question had scaled responses or when ratings were utilized. All statistical inferences were made with a significance level at 0.05.

RESULTS



SURVEY RESULTS

- 80 residents contacted, 52 responded to the survey. **26 answered all close-ended questions.**
- 52 identified year of residency (34% CA1, 33% CA2, 33% CA3).
- **Response rate of 32.5%.**
  - A comparison of responders to non-responders found **no significant difference in distribution across all CA1, CA2, and CA3 responders who completed all 18 close-ended questions (**p=0.78).
  - Not all participants responded to every question resulting in varying denominators for results reported below.
- Questions 3-8 addressed **individual awareness of the OSCE components and exam day structure**.
  - 100% of respondents were aware that they will have to take the ABA Applied OSCE exam in addition to Oral Boards.
  - 85% (22 of 26) of respondents expressed an understanding of the sequence of the ABA required exams through residency.
  - 46% (12 of 26) of respondents reported that they visited the ABA website for exam preparation.
  - 4% (1 of 26) of respondents reported the correct amount of stations included in the ABA APPLIED OSCE at that time- 9.
  - 92% (24 of 26) respondents reported understanding that they will be taking the Oral Boards and OSCE on the same day.

RESULTS

TEE Interpretation Confidence						
	1 - I know this image with 100% certainty	2	3 - neutral, would guess	4	5 - have no idea, could not identify condition	Weighted Average
Bi-ventricular function and wall motion	8.33%	37.50%	20.83%	8.33%	25.00%	3.04
Presence or absence of ASD	4.17%	33.33%	12.50%	25.00%	25.00%	3.33
Volume status assessment (recognize hypovolemia and response to volume therapy)	25.00%	25.00%	25.00%	8.33%	16.67%	2.67
Pulmonary Emboli	0.00%	16.67%	20.83%	41.67%	20.83%	3.67
Air Emboli	4.35%	17.39%	47.83%	17.39%	13.04%	3.17
Basic valvular lesions	4.17%	25.00%	20.83%	20.83%	29.17%	3.46
Pericardial effusion	37.50%	20.83%	20.83%	12.50%	8.33%	2.33
Aortic dissection	16.67%	25.00%	20.83%	16.67%	20.83%	3

CONCLUSIONS

- This survey was used to choose which 5 out of the 9 stations to practice in sim lab mock OSCEs in 2017, to prepare the first cohort of graduating residents who would be the first required to take the ABA APPLIED Exam with OSCEs.
- Top 4 stations desired for more practice included: TEE, PBLI or QI, Peri-Procedural Complications, and Ethical Dilemmas.
  - Treatment options was chosen as the fifth station in 2017 based on perceived difficulty in the ABA example for this station.
- Mock ABA OSCEs included all 9 stations (2018-2019) and all 7 stations when the content outline was updated (2020).
- Future mock ABA OSCEs should include a virtual session since the ABA has chosen to continue the full APPLIED exam throughout the pandemic.

REFERENCES

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